Why Do Forest Inventory?

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Part I: Business Overview

The MRPO, located in Pleasant Valley, IA on the Mississippi River, manages land within 300 river miles of the office. They are involved in many scientific studies and projects, such as (1) studies on invasive & endangered species, (2) tracking long term environmental changes with permanent plots & forest inventory, (3) restoration projects which reintroduce native plant species, often partnering up with the USFWS & UMRCC on these efforts.

Part II: Job Specifics

Floodplain forests on the Mississippi River contain dynamic ecosystems. It is crucial to have healthy and diverse tree populations in these areas in order to keep these ecosystems stable. Forest inventory is one metric that provides preliminary information necessary for agencies, such as the MRPO, to evaluate current state of these floodplain forests, which leads to conservation and restoration efforts that help maintain healthy tree diversity.

Part III: The Problem

What scientific methods will best provide information that could be used to evaluate forest quality?

How will we know if conservation or restoration efforts are needed to maintain healthy tree diversity in a forest?

Part IV: Background

Students will need a basic background in tree identification, common timber inventory techniques and how to use forestry tools.

Part V: Business Solution

Forest inventory done in the early 1990's by the USACE was one factor that led to forest restoration efforts on Cottonwood Island near Quincy, IL. In the mid 1990's, areas were mowed to clear vegetation in order to allow for newly planted hardwood trees such as oak, pecan, and sycamore trees to grow and replace the forest canopy, leading to more stable ecosystems in these shoreline forests.

Part VI: Student Solutions

Ultimately, I will have students create a Restoration Plan Proposal that requires them to specifically identify what trees they will plant, where they will plant them, and if they will do any other work in the area to ensure successful tree growth. As necessary, I may prompt students to think further by asking "what native trees would best improve ecosystem stability" and "what will give these newly planted trees the best chance to grow and mature to upper canopy height?"